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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,069	09/09/2003	Eugene P. Marsh	M4065.0453/P453-B	9190

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EXAMINER

LEWIS, MONICA

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.9

Office Action Summary

Application No.

10/657,069

Applicant(s)

MARSH ET AL

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55 and 56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 55 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This office action is in response to the request for continued examination filed February 7, 2005.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/7/05 has been entered.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

4. The drawings are objected to because it is not clear what is meant by the ".35" on Figure 5. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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6. Claims 55 and 56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicant amended the claims as follows: a) “substantially pure metallic” (See Claims 55 and 56). However, the specification discloses “pure metallic” (For Example: See Paragraph 32).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 55 and 56 are rejected under 35 U.S.C. 102(a) as being anticipated by Soininen et al. (U.S. Patent No. 6,482,740).

In regards to claim 55, Soininen et al. (“Soininen”) discloses the following:

a) a first electrode (36) and a second electrode (40) (For Example: See Figure 2);

b) a dielectric (38) provided between said first electrode and said second electrode (For Example: See Figure 2); and

c) at least one of said first and second electrode comprising a continuous ALD deposited rhodium film with a substantially pure metallic rhodium composition (For Example: See Figure 2 and Column 5 Lines 5-15) (Note: Substantially is being given the broadest reasonable interpretation. Applicant states that the term rhodium is intended to include not only elemental rhodium, but rhodium with other trace metals or in various alloyed combinations with other metals...as long as such rhodium alloy is conductive (See Specification Paragraph 16). The prior art discloses that the conductive thin film can comprise one or more of the following films: a) rhenium, ruthenium, osmium, cobalt, rhodium, iridium, nickel, palladium, platinum,

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copper, silver and gold. Therefore, the prior art discloses "substantially pure metallic rhodium." Finally, the claim recites an ALD deposited rhodium film. In the apparatus of Soininen the metal film is formed by first depositing a metal oxide film by an ALD process and then converting the metal oxide into elemental metal, hence, the metal film of Soininen is formed using an ALD deposition step, therefore, the metal film of Soininen can be considered an "ALD deposited" film.).

Finally, the following limitation makes it a product by process claim: a) "a continuous ALD deposited." The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

In regards to claim 56, Soininen discloses the following:

a) a first electrode and a second electrode (For Example: See Figure 2);

b) a dielectric provided between said first electrode and said second electrode (For Example: See Figure 2); and

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c) at least one of said first and second electrode comprising a substantially pure metallic rhodium layer formed by atomic layer deposition at a temperature of about 100°C to about 200°C (For Example: See Column 5 Lines 5-15 and Column 12 Lines 36-40) (Note: Substantially is being given the broadest reasonable interpretation. Applicant states that the term rhodium is intended to include not only elemental rhodium, but rhodium with other trace metals or in various alloyed combinations with other metals... as long as such rhodium alloy is conductive (See Specification Paragraph 16). The prior art discloses that the conductive thin film can comprise one or more of the following films: a) rhenium, ruthenium, osmium, cobalt, rhodium, iridium, nickel, palladium, platinum, copper, silver and gold. Therefore, the prior art discloses "substantially pure metallic rhodium." Finally, the claim recites an ALD deposited rhodium film. In the apparatus of Soininen the metal film is formed by first depositing a metal oxide film by an ALD process and then converting the metal oxide into elemental metal, hence, the metal film of Soininen is formed using an ALD deposition step, therefore, the metal film of Soininen can be considered an "ALD deposited" film.).

Additionally, the following limitation makes it a product by process claim: a) "formed by atomic layer deposition at a temperature of about 100°C to about 200°C." The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in

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"product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Finally, the applicant has not established the critical nature of the "temperature of about 100°C to about 200°C." "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir.1990). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have various ranges.

Response to Arguments

9. Applicant's arguments filed 2/7/05 have been fully considered but they are not persuasive. Applicant argues that "Soininen does not teach or suggest first and second capacitor electrodes at least one of said first and second electrodes comprising a continuous ALD deposited rhodium film with reduced carbon composition" and "substantially pure metallic rhodium layer much less a substantially pure metallic rhodium formed by rhodium atomic layer deposition at a temperature of about 100°C to about 200°C." However, Soininen discloses a first electrode (36) and a second electrode (40) and at least one of said first and second electrode comprising rhodium film (For Example: See Figure 2 and Column 5 Lines 5-15). "A continuous ALD deposited rhodium film" and "a substantially pure metallic rhodium layer formed by rhodium atomic layer deposition at a temperature of about 100°C to about 200°C" **are product by process limitations. The limitations are not a resulting structure having distinct and defined characteristics.** The Patent Office bears a lesser burden of proof in making out a case

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of prima facie obviousness for product-by-process claims because of their peculiar nature” than when a product is claimed in the conventional fashion. See *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with **evidence establishing an unobvious difference between the claimed product and the prior art product**. See *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). **Arguments are not evidence.**

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956

ML
April 30, 2005

A handwritten signature in black ink, followed by the number 2822 written below it.